severance, and determination can command success, Signor D'Albertis ought to be successful.

The island is about six miles long, picturesque, and healthy-looking. The soil is rich, and the plantations of the natives are numerous. The geological formation consists entirely of a calcareous sedimentary rock, containing numerous remains closely resembling recent forms. The appearance of the opposite shore of New Guinea is very different from that at Katow. Mangrove swamps are intersected by salt-water creeks, with low ranges of well-wooded open forests behind; beyond which the country seemed to become very rough and mountainous, with a stupendous mountain chain, on a clear day distinctly visible from the magnificent peak of Mount Yule on the west, to Mount Owen Stanley on the east. The natives of the country hereabouts are light-coloured, of medium size and active. Their hair is not woolly, and is generally worn long, being tied up in a chignon behind. They do not use tobacco, but chew the betel leaf. They wear a very tight belt, carrying a small piece of cloth. They seem to be timid and inoffensive, greedy and thievish. The women appear to be the rulers, and they are far from reticent in the presence of strangers. Some of the younger ones are tolerably good-looking; they wear showy loin dresses, and are tattooed about the breasts and belly. Their villages and houses are clean, and generally on sloping ground; they have a house in every village for the reception of guests; their mutual relations seem most friendly. They pay considerable attention to cookery, and manufacture pottery, cloths, and nets of excellent quality.

Mr. Macleay remained on Yule Island until Sept. 2, collecting and exploring. No Birds of Paradise were obtained, although many plumes were seen in the hands of natives. No Tree Kangaroo nor Cassowary was seen. He then, on account of adverse winds, returned to Cape York, and so terminated this unsuccessful attempt to explore New Guinea.

It may be mentioned that Dr. James, the surgeon, Mr. Knight, one of the botanists, and Mr. Pollard, one of the taxidermists from the *Chevert*, have undertaken an independent expedition to New Guinea on their own account, which though so much more unassuming than the one above described, may on that account have greater chance of success.

NOTES

DR. GEORGE BENNETT, of Sydney, has been in correspondence with Signor D'Albertis, the Italian naturalist now residing on Yule Island, off S.E. New Guinea. From him we learn that Sig. D'Albertis is on most friendly terms with the islanders; that he has made several excursions on to the main land, though in so doing he has been much delayed on account of his boat having been stolen by four of his own men. He afterwards, however, managed to purchase a canoe, and has visited five villages, the language of the natives of which he can now speak pretty well. On the coast he finds a fauna and flora much resembling North Australia, but inland, on the mountains, the Papuan vegetation predominates. He has succeeded in obtaining a perfect specimen of his new bird of paradise, *Paridisia raggiana*, and has shot a second specimen of the ground tree-kangaroo, *Dorcopis luctuosa*. His health is excellent; but an Italian companion has suffered from fever and slight sunstroke.

LIEUT. CAMERON has earned a high place as an explorer by the work which he has so successfully and so quietly accomplished. It will be remembered that Cameron was sent out in 1873 to find Livingstone, whose fate was then unknown. On his way to Tanganyika he learnt the fate of the great traveller, but continued westwards and determined to carry out an exploration on his own account. After surveying a great part of Lake Tanganyika and discovering what he thought was likely to prove an outlet to the westward, he proceeded to the Lualaba for the purpose of finding out whether that river is connected with the Congo or the Nile system. The latest news that Sir Henry Rawlinson had to announce in his address to the Geographical Society about a month ago was that at the end of May 1874, Cameron had finally left Ujiji for the West. The telegrams just received are very brief, and announce that he came out at Benguela and reached Loanda on Nov. 19, with fifty-seven followers, "all well." Cameron was forced by adverse circumstances to abandon the Congo route, and followed the watersheds between the Zambesi and Congo. He has thus accomplished the rare feat of marching right across the continent, and will no doubt bring home many additions to our knowledge of central tropical Africa.

THE Professorship of Physiology in the University of Glasgow will be vacant at the end of the present session on account of the resignation of Dr. Andrew Buchanan.

WE have received from Prof. Mohn, Christiania, a printed paper giving a brief *résumé* of the meteorology of Norway for 1874. Monthly results of temperature are stated for forty-one stations, and of rainfall for thirty stations, and these results are compared with averages of previous years for those stations at which observations have been continued for some time. These forty-one stations show an increase in the number of the stations of previous years, and we have much satisfaction in learning that, as the result of a recent special grant by the Norwegian Government, the stations have still further increased to fifty, and that each of them has been furnished with minimum thermometers and with new thermometer screws. Of the stations sixteen are supplied with Fortin's barometer, sixteen with the Kew barometer, thirty-one with wind-vanes and velocity-plates, thirty-seven with rain-gauges, thirty-two with dry and wet bulb hygrometers, nine of the coldest stations with hair hygrometers, and all of the fifty with aneroids. In Prof. Mohn's energetic and able hands highly valuable results may be looked for from these changes and additions in the further development of the meteorology of Norway, which plays so prominent a part in the meteorology of Europe.

THE *American Naturalist*—the recognised organ of intercommunication between naturalists in America—will pass, at the commencement of the coming year, into the hands of Messrs. H. O. Houghton and Co., of Cambridge, Mass. It will still be under the able editorship of Dr. A. S. Packard, jun., who will be assisted by a number of eminent men of science, in all departments. Indeed, the list of expected contributors for 1876 is a very strong one. The amount of matter in each number will be increased, and articles will be introduced of a more popular character than heretofore. We are glad to take this opportunity of again calling the attention of English naturalists to this excellent periodical.

M. DUMAS, the distinguished Perpetual Secretary of the French Academy of Sciences, has been elected a member of the Académie Française in room of the late M. Guizot. Science has now two representatives amongst the grandees of French literature—M. Claude Bernard and M. Dumas.

SIR HENRY RAWLINSON, President of the Geographical Society, has been elected a foreign member of the Geographical Society of Paris.

THE *Pall Mall Gazette* is informed that Mr. Max Müller has been asked to accept a professorship at Florence, at the highest salary ever offered to a professor in Italy.

A TELEGRAM dated Adelaide, the 18th inst., states that Mr. Giles's exploring expedition (see vol. xii. pp. 135, 194), fitted out by the Hon. Thos. Elder, M.L.C., has arrived at Perth, Western Australia, direct from Adelaide. This is the third expedition that has crossed Central Australia within the last two years. The first was that under Col. Warburton, from the telegraph line westwards, generally between 20° and 21° S. lat.; then Mr. Forrest crossed from Perth to the telegraph line by a route about 5° farther south. Mr. Giles's route, we believe, has been much farther south than Mr. Forrest's; judging from previous news, probably about 100 miles from the south coast.

A TELEGRAM from Naples, Dec. 19, states that Prof. Palmieri reports from the observatory near Vesuvius that fire has appeared in the interior of the crater, and expresses his opinion that an eruption of long duration may be expected. A volume of black smoke rose from the volcano on the morning of the 19th. A telegram of the 20th states that the fire in the crater is gradually increasing in strength, and that the instruments of the observatory are in motion.

A REUTER'S telegram of Dec. 21 states that the New York papers publish advices from Porto Rico stating that the town of Arecivo in that island had been wholly destroyed by an earthquake. Only two churches and six houses are stated to be left standing.

DURING the recent heavy floods, the low-level districts of Somersetshire have been submerged beyond precedent, so that it has been possible to sail across country for twenty miles. Many farms and cottages had to be abandoned, and for the first time the railways beyond Bridgwater were covered with several feet of water. One of the results of the flood was the driving from their haunts of great numbers of rats, some of which might have been seen by railway passengers to have taken refuge in willows and other trees along the line. Deserted houses were also taken possession of. In one case a labourer, on proceeding to his cottage by boat to obtain some necessary articles, was about getting into the bedroom window, when he found the room swarming with starving rats, whose demonstrations were so threatening that had he not made a hasty retreat there was every probability he would have been eaten up alive.

THE third annual dinner of the students of the Royal School of Mines took place on Friday the 19th inst., at the St. James's Hall Restaurant. In spite of the unavoidable absence of many who had expressed their intention of being present, the students, associates, and professors mustered to the number of nearly sixty.

A COMMITTEE was appointed some time ago by the Geographical Society of Paris to arrange for the erection of a building for its special use. A large sum of money has been collected, partly by loans, partly by private subscription and grants from the Society. Further proceedings have, however, been stopped, the Prefet of the Seine having intimated his intention to erect an establishment in which several of the learned societies of Paris are to have meeting rooms and libraries, and in which collections will be located at the expense of the city.

A *Daily News* telegram announces that the Italian Geographical Society has resolved that its exploring expedition to equatorial Africa shall start at the end of next January, so as to reach Ankober, the capital of the Kingdom of Shoan, before the rainy season. From Ankober, the expedition will penetrate the Galla country, in a south-west direction, towards the Victoria Nyanza Basin. Subscriptions for defraying the expenses will be received by the Italian Geographical Society in Rome.

THE Admiralty have made arrangements with Mr. Allen Young, the experienced Arctic voyager, to communicate with the entrance of Smith's Sound in the summer of 1876, in hopes of obtaining some information of the proceedings of the Arctic expedition.

IN Nos. 2 and 3 (1875) of Guido Cora's *Cosmos*, just to hand, is the first instalment of a paper, by Giacome Bove, giving an account of a journey to Borneo; Sarawak and Labuan were visited, and an ascent of Kini Balu is described. In continuation of the papers on recent expeditions to New Guinea a useful *résumé* of our knowledge of the island at the end of 1875 is given; there are also letters from Beccari, D'Albertis, and L. Cambiaso of the *Vettor Pisano*. Two maps illustrate these New Guinea papers.

IN accordance with the will of Prof. Jüngken, of Berlin, the *London Medical Record* states, his collection of scientific works and all his surgical instruments have been presented by his widow to the Augusta Hospital, and a letter of thanks has been sent to her by the Empress Augusta. The Royal Saxon Academy of Sciences at Leipzig has also received a donation from the late Dr. Hermann Härtel of 30,000 marks, to be expended in helping German students to prosecute scientific inquiries.

AT the annual meeting of the Eastbourne Natural History Society on the 8th ult. the Secretary read a satisfactory report. The President, Mr. F. C. S. Roper, announced that ninety-one additions had been made to the fauna and flora of the district during the year.

IN the form of a supplement to the December number of the *Journal of Botany*, Mr. W. B. Hemsley publishes an "Outline of the Flora of Sussex," a list of all Phanerogams and Vascular Cryptogams known to occur within the county, with their authorities.

THE *Garden* announces an addition to its attractions in the form of a "coloured plate (full-page size) of a beautiful or rare flower or fruit, of proved value for our gardens, and executed in the best style of art." The aim is to illustrate, as nearly as may be in their natural colours, the finest of new flowers and fruits. The specimens which we have seen are really beautiful, and the enterprise deserves encouragement.

M. H. GIFFARD has reported on the Paris balloon accident to which we referred last week. He finds that during the process of inflation the net and the canvas got frozen together, the consequence being that during dilatation of the latter, the net could not yield freely, and therefore exerted pressure on the canvas, which broke suddenly near the valve. Precautions will be taken in future to prevent a similar occurrence.

AN examination will be held at Clare College, Cambridge, on March 28 and three following days, when a scholarship in Natural Science of the annual value of 60*l* for two years will be offered for competition. Particulars by application to the tutor, the Rev. W. Raynes. A Natural Science Scholarship at Caius College, of the same value, will be offered for competition on April 4. Particulars from the Rev. N. M. Ferrers, tutor of Gonville and Caius College.

THE Cambridge University Natural Science Club commenced the October Term by the formation of a new code of rules. The officers for the term were—President, A. J. Jukes Browne, B.A.; Vice-president, J. F. M. H. Stone; Hon. Sec., A. F. Buxton. Six papers have been read during the Term, usually followed by interesting discussions—"On the evolution of fossil forms," by A. J. Jukes Browne, B.A. (St. John's); "The motion of glaciers," by T. W. Bridge (Trinity); "Darwin's Insectivorous Plants," by J. F. M. H. Stone (St. Peter's); "Huxley's classification of animals," by A. F. Buxton (Trinity); "'Typical' number of somites in arthropoda," by A. M. Marshall, B.A. (St. John's); "Molecular energy," by E. B. Sargant (Trinity). There were sixteen members in residence.

THE fourth number of volume ii. of the Cincinnati *Quarterly Journal of Science*, edited by S. A. Miller and L. M. Hosea, has lately been issued, and, we regret to learn, closes the series of this publication. During the short period of its existence it has been the medium of presenting a number of original scientific papers especially relating to the palæontology of the Mississippi Valley, which will render it a necessary work of geological and zoological reference.

A ROMAN Society has commenced excavations quite close to the monument of Minerva Medica. They have come upon some very interesting things, among which are the paintings that adorned a columbary. The Roman archæologists and artists believe that these paintings are of the Augustan age, and are of great value both to science and art. In making preparations for constructing the central hall in the Conservatory Palace at the Capitol, a ground-plan has been discovered supposed to be that of the Temple of the Capitoline Jupiter, to which Dionysius gave a surface of 4,000 square feet. In the same place has been found a column of large size, which appears to belong to the Temple of Jupiter Optimus Maximus. Excavations in other places have brought to light additional fragments of antiquarian interest.

THE Secretary of the Interior, in his annual report to the President of the United States, commends in high terms the work of the Geological and Geographical Survey of the Territories, and presents the following brief summary of the results for the season of 1875:—The survey under Dr. Hayden continued its labours of the two preceding years in the Territory of Colorado. The field of work during the past season was the southern and western portions of said Territory, and including a belt, fifteen miles in width, of the northern border of New Mexico and the eastern border of Utah. The survey was divided into seven parties, four of which were devoted to topographical and geological labours, one to primary triangulation, one to photographic work, and one to the transportation of supplies. The survey of the southern and south-western portions of Colorado has been completed, so as to make six sheets of physical atlas, designed by this Department, leaving unexplored only the north-western corner thereof, which can be surveyed by a single party during the coming year. The districts explored in the past season were not so mountainous as those of the previous years, but were quite remote from settlements, and in perhaps the most inaccessible regions of this continent. The total area surveyed is about 30,000 square miles, portions of which were very rugged. Much of this area is drained by the Colorado river, and is mainly a plateau country cut in every direction by deep gorges or canons, the sides of which show, for geological investigations, admirable sections of the strata forming the earth's crust. The topography of the district surveyed was elaborated in detail by the aid of the plane-table. The exploration of the remarkable prehistoric ruins of Southern Colorado, glimpses of which were obtained the preceding season, was continued with great success. They were traced down the canons to the Colorado river in New Mexico, Utah, and Arizona, and their connection established with the cliff cities of the Moquis of the latter Territory. Hundreds of cave-dwellings, of curious architecture and many miles from water, were found in the sides of the gorges, and the ruins of extensive towns discovered in the adjacent plains, indicating the former existence of a people far more numerous and advanced in the arts of civilization than their supposed descendants of the present day. Of these ruins many interesting sketches, plans, and photographs were made, and a valuable collecion of flint weapons, earthenware and other specimens, was gathered. The materials thus obtained will enable the survey to present an exhaustive report on this interesting subject. The photographer of the survey obtained a series of mountain views on plates twenty-four inches long by twenty wide, or larger by several inches than any landscape photographs ever before taken in this country.

A FRENCH clerical journal, quoted by the *Revue Scientifique*, maintains that the tolling of the church bell is of much greater efficacy than the use of lightning-rods in warding off the effects of a thunder-storm, and advises the faithful to resort to the former means in preference to the latter.

THE *Revue Scientifique* announces the death, at Zurich, of the chemist Prof. E. Kopp, "one of the creators of the atomic theory."

THE Institution of Naval Architects has issued a list of subjects on which communications are desired.

THE American Institute of Mining Engineers held a meeting at Cleveland, Ohio, October 26–28. Its proximity to several of the large iron and steel works and the interest taken by its President, Prof. A. L. Holley, in the details of the Bessemer process, caused the meeting to be more especially devoted to that class of subjects. Prof. Holley in his opening address referred to several improvements which ought to be made in the iron and steel manufactures. Among the papers of scientific interest relating to mining subjects was a mention by Mr. Charles A. Ashburner of the discovery of coal-beds in the Vespertine sandstone of Pennsylvania. Mr. Ashburner is one of the assistant geologists of the Second Geological Survey of Pennsylvania. There have been a few scattered instances of discoveries of coal in the Vespertine rocks, and such beds have been designated as false coal-measures. The present discovery may, however, serve to modify our notions as to that sub-carboniferous formation. In a tunnel passing through Sideling Hill, Huntingdon County, Penn., in cutting the Vespertine sandstones, there were found not less than nineteen beds of coal; their thickness varies from one to thirteen inches; collectively they would make a thickness of four feet. The coarseness and false bedding of the Vespertine strata indicate a period of frequent agitation and numerous local currents; but the presence of coal-beds shows that considerable spaces of repose must have intervened, and that the changes were slowly effected.

AT the meeting of the Norfolk and Norwich Naturalists' Society, on Nov. 30, the Secretary read a short paper from Dr. Lowe on the occurrence of a rare microscopic fresh-water Alga (*Clathrocystis æruginosa*, Hen.) at Anmer, near Lynn. In June 1870 Dr. Lowe discovered a large quantity of it in the lake at Sandringham in the form of a green scum. In October of the present year he again discovered it growing in a pond at Anmer, two miles from Sandringham, his attention being attracted by the peculiar scum which he at once recognised as *Clathrocystis*. It seems probable that it has recently been introduced at Anmer by the agency of wild fowl.

THE additions to the Zoological Society's Gardens during the past week include a Haste's Apteryx (*Apteryx hastei*) from New Zealand, presented by Baron Ferdinand von Muller; a Marginated Parrakeet (*Tanygnathus marginatus*) from the Philippine Isles, presented by Master Hugh Sutton; two Bengal Leopard Cats (*Felis bengalensis*) from Cashmere, presented by Mr. W. A. Cuthell; a Bay Antelope (*Cephalophus dorsalis*) from W. Africa, received in exchange; an Ocelot (*Felis pardalis*) from S. America, a Hoffmann's Sloth *Cholopus hoffmanni*) from Panama, a Duck Falcon (*Falco anatum*) captured at sea, purchased; a pair of Peacock Pheasants (*Polypectron chinquis*) from Burmah, deposited.

SCIENTIFIC SERIALS

Jahrbücher für wissenschaftliche Botanik. Herausgegeben von Dr. N. Pringsheim. Band x. Heft 11.—In the present number of Pringsheim's well-known and valuable year-books there are four papers, all of them of considerable interest. The first is by Dr. J. Reinke, of Göttingen—Contributions to the anatomy of the secreting organs, occurring especially on the serrations of certain foliage-leaves. It has been observed that in many plants the serrations of the leaves act as glands and secrete in many instances a mucilaginous substance, and in others resin, or a mixture of mucilage and resin, called blastocolla by Hanstein. Reinke has carefully examined the structure of these secreting organs in a large number of dicotyledonous plants, but has not made any exhaustive micro-chemical investigation of the secretions themselves. His observations show that the serrations of the leaves of Dicotyledons are in general the bearers of peculiar organs of secretion, whose activity may cease even while the leaf is in the bud, or at a later period. *Æsculus* and plants with